**Revise Section 630 of the Standard Specifications for this project as follows:**

## Subsection 630.01 shall include the following:

This work consists of furnishing, operating, and maintaining a portable message sign panel, to become the property of the Department after completion of the project.

## Add subsection 630.031 immediately following subsection 630.03 as follows:

**630.031 Portable Message Sign Panel.** Portable message sign panel shall be furnished as a device fully self-contained on a portable trailer, capable of being licensed for normal highway travel, and shall include leveling and stabilization jacks. The portable message sign panel shall be stable in winds up to 80 MPH. The panel shall display a minimum of three eight-character lines. The panel shall be a dot‑matrix type with either fluorescent yellow flip‑disks legend and/or LED legend on a flat black background. LED signs shall have a pre-default message that activates before a power failure. The sign shall be solar powered with independent back‑up battery power. The sign shall be capable of 360 degrees rotation and be able to be elevated to a height of at least five feet above the ground to the bottom of the sign. Lifting of the sign shall be accomplished by electric/hydraulic methods. The sign shall be visible from one‑half mile under both day and night conditions. The message shall be legible from a minimum of 650 feet. The sign shall automatically adjust its light source to meet the legibility requirements during the hours of darkness. The sign enclosure shall be weather tight and provide a clear polycarbonate front cover.

Solar powered message signs shall be capable of operating continuously for 10 days without any sun. All instrumentation and controls shall be contained in a lockable enclosure. The sign shall be capable of changing and displaying sign messages and other sign features such as flash rates, moving arrows, etc.

**▲**The sign shall include and be operated and programmed through a lap top computer or microprocessor capable of changing and displaying sign messages and other sign features such as flash rates, moving arrows, etc.

Each sign shall also conform to the following:

1. Flip-disks legend signs shall have fluorescent ultraviolet black light bulbs.
2. In addition to the onboard power source with battery backup, each sign shall be capable of operating on a hard wire, 100‑110 VAC, external power source.
3. Each sign shall be furnished with an operating and parts manual, wiring diagrams, and trouble‑shooting guide.
4. The portable message sign shall be capable of maintaining all required operations under Colorado mountain‑winter weather conditions.
5. Each sign shall be furnished with an attached license plate and mounting bracket.
6. Each sign shall be wired with a 7‑prong male electric plug for the brake light wiring system.
7. **▲**All communications hardware for remote programming, including, cellular phone, laptop computer, computer hardware and software, on‑trailer electrical wiring connectors, and switch controls necessary to allow all sign functions required by the specification shall be provided with each sign.
8. Each sign shall also be provided with all necessary equipment so that it can be switched to remote programming, using either hard wire dedicated telephone line, or remote dial-up via cellular telephone.
9. The supplier shall demonstrate the capabilities of the sign and provide \_\_▼ \_\_ days of training for operation and maintenance of the sign.)

Before obtaining this item, the Contractor shall submit the trade name, model number and specifications of the portable message sign panel he intends to use, to the Engineer, for approval. ADDCO Manufacturing Co. Inc., American Signal Company, Winko‑Matic Signal Company, Precision Solar Controls Inc. and National Signal Company are known to produce a suitable portable message sign panel. The Engineer's decision concerning acceptability of this item shall be Final.

## Subsection 630.14 shall include the following:

The portable message sign panel shall be available on the project site at least \_\_\_♦\_\_\_ before the start of active roadway construction. Maintenance, storage, operation, relocation to different sites during the project, and all repairs of portable message sign panels shall be the responsibility of the Contractor.

## Subsection 630.18 shall include the following:

Portable message sign panels will be measured one of the two following ways:

1. By the actual number of days each portable message sign is used on the project as approved by the Engineer.
2. By the maximum number of approved units in use on the project at any one time.

## Subsection 630.19 shall include the following:

Payment will be made under:

| **Pay Item** | **Pay Unit** |
| --- | --- |
| Portable Message Sign Panel | Each |
| Portable Message Sign Panel | Day |

Payment for Portable Message Sign Panel will be full compensation for all work and materials required to complete the item, including furnishing, set up, moving, maintaining, and transferring ownership to the Department upon completion of the project.

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**Instructions to Designers** (delete instructions and symbols from final draft):

▲Include these requirements on appropriate projects.

▼ Insert the appropriate time, (10 working days, two weeks, . . .)

♦ Specify the number of calendar or working days.